\_\_\_\_\_

Sequence Listing was accepted.

If you need help call the Patent Electronic Business Center at (866)
217-9197 (toll free).

Reviewer: Durreshwar Anjum

Timestamp: [year=2008; month=10; day=28; hr=12; min=37; sec=47; ms=485;
]

\_\_\_\_\_\_

## Validated By CRFValidator v 1.0.3

Application No: 09925284 Version No: 8.0

Input Set:

Output Set:

**Started:** 2008-09-30 12:10:12.155 **Finished:** 2008-09-30 12:10:12.864

**Elapsed:** 0 hr(s) 0 min(s) 0 sec(s) 709 ms

Total Warnings: 6

Total Errors: 0

No. of SeqIDs Defined: 10

Actual SeqID Count: 10

Erro	or code	Error Descript	ion								
W	213	Artificial	or	Unknown	found	in	<213>	in	SEQ	ID	(1)
W	213	Artificial	or	Unknown	found	in	<213>	in	SEQ	ID	(2)
W	213	Artificial	or	Unknown	found	in	<213>	in	SEQ	ID	(3)
W	213	Artificial	or	Unknown	found	in	<213>	in	SEQ	ID	(4)
W	213	Artificial	or	Unknown	found	in	<213>	in	SEQ	ID	(5)
W	213	Artificial	or	Unknown	found	in	<213>	in	SEQ	ID	(6)

## SEQUENCE LISTING

```
<110> Hawiger, Daniel
     Steinman, Ralph M.
     Nussenzweig, Michel C.
<120> Enhanced Antigen Delivery and Modulation
      of the Immune Response Therefrom
<130> RUJ-001CNCPRCE2
<140> 09925284
<141> 2001-08-09
<150> 09/586,704
<151> 2000-06-05
<150> 08/381,528
<151> 1995-01-31
<160> 10
<170> FastSEQ for Windows Version 4.0
<210> 1
<211> 49
<212> DNA
<213> Artificial Sequence
<220>
<223> synthetic
<400> 1
atagtttagc ggccgcgata tctcactaac actcattcct gttgaagct
                                                                 49
<210> 2
<211> 57
<212> DNA
<213> Artificial Sequence
<220>
<223> antisense synthetic sequence
<400> 2
tetteteaga gagggtgaga ggaccattte gategateae tegeeggega tttgata 57
<210> 3
<211> 68
<212> DNA
<213> Artificial Sequence
<220>
<223> synthetic
<400> 3
```

```
ctagcgacat ggccaagaag gagacagtct ggaggctcga ggagttcggt aggttcacaa 60
                                                                    68
acaggaac
<210> 4
<211> 71
<212> DNA
<213> Artificial Sequence
<220>
<223> synthetic
<400> 4
acagacggta gcacagacta tggtattctc cagattaaca gcaggtatta tgacggtagg 60
acatgatagg c
                                                                    71
<210> 5
<211> 70
<212> DNA
<213> Artificial Sequence
<220>
<223> antisense synthetic sequence
qtctqtqttc ctqtttqtqa acctaccqaa ctcctcqaqc ctccaqactq tctccttctt 60
ggccatgtcg
                                                                    70
<210> 6
<211> 69
<212> DNA
<213> Artificial Sequence
<220>
<223> antisense synthetic sequence
<400> 6
ggccgcctat catgtcctac cgtcataata cctgctgtta atctggagaa taccatagtc 60
tgtgctacc
                                                                    69
<210> 7
<211> 30
<212> PRT
<213> Homo sapiens
<220>
<223> carboxy terminal DEC-205
<400> 7
Arg His Arg Leu His Leu Ala Gly Phe Ser Ser Val Arg Tyr Ala Gln
                 5
                                     10
Gly Val Asn Glu Asp Glu Ile Met Leu Pro Ser Phe His Asp
            20
                                 25
                                                      30
<210> 8
<211> 25
```

<212> PRT

```
<213> mus musculus
<220>
<223> amino terminal Dec-205
<400> 8
Ser Glu Ser Ser Gly Asn Asp Pro Phe Thr Ile Val His Glu Asn Thr
1 5
                 10
Gly Lys Cys Ile Gln Pro Leu Phe Asp
         20
<210> 9
<211> 19
<212> PRT
<213> mus musculus
<220>
<223> amino terminal DEC-205
<400> 9
Ser Glu Ser Ser Gly Asn Asp Pro Phe Thr Ile Val His Glu Asn Thr
1 5
                    10
Gly Lys Cys
<210> 10
<211> 1723
<212> PRT
<213> mus musculus
<220>
<223> predicted DEC-205
<400> 10
Met Arg Thr Gly Arg Val Thr Pro Gly Leu Ala Ala Gly Leu Leu Leu
                             10
Leu Leu Arg Ser Phe Gly Leu Val Glu Pro Ser Glu Ser Ser Gly
              25
Asn Asp Pro Phe Thr Ile Val His Glu Asn Thr Gly Lys Cys Ile Gln
Pro Leu Ser Asp Trp Val Val Ala Gln Asp Cys Ser Gly Thr Asn Asn
                   55
Met Leu Trp Lys Trp Val Ser Gln His Arg Leu Phe His Leu Glu Ser
65 70
                                 75
Gln Lys Cys Leu Gly Leu Asp Ile Thr Lys Ala Thr Asp Asn Leu Arg
                              90
Met Phe Ser Cys Asp Ser Thr Val Met Leu Trp Trp Lys Cys Glu His
   100 105 110
His Ser Leu Tyr Thr Ala Ala Gln Tyr Arg Leu Ala Leu Lys Asp Gly
   115 120 125
Tyr Ala Val Ala Asn Thr Asn Thr Ser Asp Val Trp Lys Lys Gly Gly
  130 135 140
Ser Glu Glu Asn Leu Cys Ala Gln Pro Tyr His Glu Ile Tyr Thr Arg
145 150
                                155
Asp Gly Asn Ser Tyr Gly Arg Pro Cys Glu Phe Pro Phe Leu Ile Gly
             165
                              170
```

Glu	Thr	Trp	Tyr 180	His	Asp	Суз	Ile	His 185	Asp	Glu	Asp	His	Ser 190	Gly	Pro
Trp	Cys	Ala 195	Thr	Thr	Leu	Ser	Tyr 200	Glu	Tyr	Asp	Gln	Lys 205	Trp	Gly	Ile
Cys	Leu 210	Leu	Pro	Glu	Ser	Gly 215	Cys	Glu	Gly	Asn	Trp 220	Glu	Lys	Asn	Glu
	Ile	Gly	Ser	Суз	_		Phe	Asn	Asn			Ile	Leu	Ser	_
225	G1	77 -	T	77-7	230	G	G1	7	G1	235	7.1.	7	T	T	240
гуз	Glu	Ala	ıyı	245	ser	СУЗ	GIII	ASII	250	GTĀ	Ala	Asp	Leu	255	ser
Ile	His	Ser	Ala 260	Ala	Glu	Leu	Ala	Tyr 265	Ile	Thr	Gly	Lys	Glu 270	Asp	Ile
Ala	Arg	Leu 275	Val	Trp	Leu	Gly	Leu 280	Asn	Gln	Leu	Tyr	Ser 285	Ala	Arg	Gly
Trp	Glu 290	Trp	Ser	Asp	Phe	Arg 295	Pro	Leu	Lys	Phe	Leu 300	Asn	Trp	Asp	Pro
Gly	Thr	Pro	Val	Ala	Pro	Val	Ile	Gly	Gly	Ser	Ser	Cys	Ala	Arg	Met
305					310			_	_	315		_		_	320
Asp	Thr	Glu	Ser	Gly 325	Leu	Trp	Gln	Ser	Val	Ser	Cys	Glu	Ser	Gln 335	Gln
Pro	Tyr	Val	Cys 340		Lys	Pro	Leu	Asn 345		Thr	Leu	Glu	Leu 350		Asp
Val	Trp	Thr		Thr	Asp	Thr	His		His	Val	Glv	Tro		Pro	Asn
	_	355	_		_		360	_				365			
Asn	Gly 370	Phe	Cys	Tyr	Leu	Leu 375	Ala	Asn	GIu	Ser	380	ser	Trp	Asp	Ala
Ala	His	Leu	Lys	Càa	Lys	Ala	Phe	Gly	Ala	Asp	Leu	Ile	Ser	Met	His
385					390					395					400
Ser	Leu	Ala	Asp	Val 405	Glu	Val	Val	Val	Thr 410	Lys	Leu	His	Asn	Gly 415	Asp
Val	Lys	Lys	Glu 420	Ile	Trp	Thr	Gly	Leu 425	Lys	Asn	Thr	Asn	Ser 430	Pro	Ala
Leu	Phe	Gln 435	Trp	Ser	Asp	Gly	Thr 440	Glu	Val	Thr	Leu	Thr 445	Tyr	Trp	Asn
Glu	Asn	Glu	Pro	Ser	Val	Pro	Phe	Asn	Lys	Thr	Pro	Asn	Cys	Val	Ser
	450					455					460				
Tyr 465	Leu	Gly	Lys	Leu	Gly 470	Gln	Trp	Lys	Val	Gln 475	Ser	Cys	Glu	Lys	Lys 480
Leu	Arg	Tyr	Val	Cys 485	Lys	Lys	Lys	Gly	Glu 490	Ile	Thr	Lys	Asp	Ala 495	Glu
Ser	Asp	T.v.e	T.011		Pro	Pro	Aan	Glu		Trn	T.ve	Ara	Hiq		Glu
DCI	1150	шур	500	Cyb	110	110	1150	505	Gry	ттр	шуы	1119	510	Gry	GIG
Thr	Cys	Tyr 515		Ile	Tyr	Glu	Lys 520		Ala	Pro	Phe	Gly 525		Asn	Cys
Asn	Leu		Ile	Thr	Ser	Arg 535		Glu	Gln	Glu	Phe 540		Asn	Tyr	Met
Mot	530	7 an	Tire	7 an	Twa		T 011	7 mar	Tug	Тил		Trn	Thr	C1,,	T 011
мет 545	Lys	ASN	т Хт.	ASP	ьуs 550	ser	ьeu	Arg	тЛя	1yr 555	rne	ттр	TIII.	СΤΆ	ьеи 560
	7 an	Dro	7) an	Cor		C1,,	C1.,	Time	Cor		71.	77-7	71-	Cln	
	Asp			565	_			_	570					575	
Val	Lys	Gln	Ala 580	Val	Thr	Phe	Ser	Asn 585	Trp	Asn	Phe	Leu	Glu 590	Pro	Ala
Ser	Pro	Gly 595	Gly	Суз	Val	Ala	Met 600	Ser	Thr	Gly	Lys	Thr 605	Leu	Gly	Lys
Trp	Glu	Val	Lys	Asn	Cys	Arg	Ser	Phe	Arg	Ala	Leu	Ser	Ile	Cys	Lys
	610					615					620				
Lys	Val	Ser	Glu	Pro	Gln	Glu	Pro	Glu	Glu	Ala	Ala	Pro	Lys	Pro	Asp

625	Dago	Cira	Dage	<i>C</i> 1	630	Т 2020	1110	Tha	Dha	635 Dags	C 0 20	Com	Т о	C 0 70	640
Asp	LIO	СУБ	Pro	645	дтУ	ттЬ	птр	TIIT	650	LTO	26T	Set	ьeu	5er 655	СУБ
Tyr	Lys	Val	Phe		Ile	Glu	Arg	Ile		Arg	Lys	Arg	Asn		Glu
=	-		660				-	665		-	-	_	670	-	
Glu	Ala	Glu	Arg	Phe	Cys	Gln	Ala	Leu	Gly	Ala	His	Leu	Pro	Ser	Phe
		675					680					685			
Ser	Arg 690	Arg	Glu	Glu	Ile	Lys 695	Asp	Phe	Val	His	Leu 700	Leu	Lys	Asp	Gln
Phe	Ser	Gly	Gln	Arg	Trp	Leu	Trp	Ile	Gly	Leu	Asn	Lys	Arg	Ser	Pro
705					710					715					720
Asp	Leu	Gln	Gly	Ser 725	Trp	Gln	Trp	Ser	Asp 730	Arg	Thr	Pro	Val	Ser 735	Ala
Val	Met	Met	Glu	Pro	Glu	Phe	Gln		Asp	Phe	Asp	Ile	_	Asp	Cys
			740		_	_		745	_	_	_		750 -		_
Ala	Ala	Ile 755	Lys	Val	Leu	Asp	Val 760	Pro	Trp	Arg	Arg	Val 765	Trp	His	Leu
Tyr	Glu 770	Asp	Lys	Asp	Tyr	Ala 775	Tyr	Trp	Lys	Pro	Phe 780	Ala	СЛЗ	Asp	Ala
_	Leu	Glu	Trp	Val	_	Gln	Ile	Pro	Lys	_	Ser	Thr	Pro	Gln	
785	70	T.	TT	70	790	<i>C</i> <sup>3</sup>	75	TT.	<i>C</i> <sup>3</sup>	795	TT '	C.	Б	Б	800
Pro	Asp	Trp	Tyr	Asn 805	Pro	GLu	Arg	Thr	Gly 810	Ile	His	GLY	Pro	Pro 815	val
Ile	Ile	Glu	Gly 820	Ser	Glu	Tyr	Trp	Phe 825	Val	Ala	Asp	Pro	His 830	Leu	Asn
Tyr	Glu	Glu 835	Ala	Val	Leu	Tyr	Cys 840	Ala	Ser	Asn	His	Ser 845	Phe	Leu	Ala
Thr	Ile 850	Thr	Ser	Phe	Thr	Gly 855	Leu	Lys	Ala	Ile	Lys 860	Asn	Lys	Leu	Ala
Asn	Ile	Ser	Gly	Glu	Glu	Gln	Lys	Trp	Trp	Val	Lys	Thr	Ser	Glu	Asn
865					870					875					880
Pro	Ile	Asp	Arg	Tyr 885	Phe	Leu	Gly	Ser	Arg 890	Arg	Arg	Leu	Trp	His 895	His
Phe	Pro	Met	Thr 900	Phe	Gly	Asp		Cys 905		His	Met	Ser	Ala 910	_	Thr
Trp	Leu	Val 915	Asp	Leu	Ser	Lys	Arg 920	Ala	Asp	Суз	Asn	Ala 925	Lys	Leu	Pro
Phe	Ile 930		Glu	Arg	Tyr	Asn 935		Ser	Ser	Leu	Glu 940		Tyr	Ser	Pro
Asp		Ala	Ala	Lys	Val		Сув	Thr	Glu	Lys		Ile	Pro	Phe	Gln
945					950					955					960
Asn	Lys	Cys	Phe	Leu 965	Lys	Val	Asn	Ser	Gly 970	Pro	Val	Thr	Phe	Ser 975	Gln
Ala	Ser	Gly	Ile 980	Cys	His	Ser	Tyr	Gly 985	Gly	Thr	Leu	Pro	Ser 990	Val	Leu
Ser	Arg	Gly 995	Glu	Gln	Asp	Phe	Ile 1000	Ile	Ser	Leu	Leu	Pro	Glu	Met	Glu
Ala	Ser		Trp	Ile	Glv	Leu			Thr	Ala	Tyr			Ile	Asn
	1010				x	1015	_	1			1020		9		~**
Arg	Trp	Thr	Asp	Asn	Arg	Glu	Leu	Thr	Tyr	Ser	Asn	Phe	His	Pro	Leu
1025	5				1030	)				103	5				1040
Leu	Val	Gly	Arg	Arg 1045		Ser	Ile	Pro	Thr 1050		Phe	Phe	Asp	Asp 105	
Ser	His	Phe	His	_	Ala	Leu	Ile	Leu 1065		Leu	Lys	Lys	Ser 1070		Leu
Thr	Gly	Thr	Trp		Phe	Thr	Ser			Glu	Arg	His			Ser
		107	5				1080	)				1085	5		

Leu Cys Gln Lys	_		Glu Asp	=	=	Glu Asn
1090		1095	7 7	1100		T]- C
Thr Ser Lys Thr	_	_	Asn Asn	_	гла тте	
1105	1110			1115		1120
Lys Pro Leu Thr	_	GIY AIA	_	_	мет гуз	=
	1125	m) 7	1130		-1 -1	1135
Met Arg Leu Val		Thr Asp	_	GIn GIn		
114			1145		115	
Val Gln Ala Thr	Leu Arg			Trp Ile		Ser Ser
1155		1160			1165	
Gln Asp Asp Glu	Leu Asn	Phe Gly	Trp Ser	Asp Gly	Lys Arg	Leu Gln
1170		1175		1180	)	
Phe Ser Asn Trp	Ala Gly	Ser Asn	Glu Gln	Leu Asp	Asp Cys	Val Ile
1185	1190			1195		1200
Leu Asp Thr Asp	Gly Phe	Trp Lys	Thr Ala	Asp Cys	Asp Asp	Asn Gln
	1205		1210	)		1215
Pro Gly Ala Ile	Cys Tyr	Tyr Pro	Gly Asn	Glu Thr	Glu Glu	Glu Val
122	0		1225		123	0
Arg Ala Leu Asp	Thr Ala	Lys Cys	Pro Ser	Pro Val	Gln Ser	Thr Pro
1235		1240	)		1245	
Trp Ile Pro Phe	Gln Asn	Ser Cys	Tyr Asn	Phe Met	Ile Thr	Asn Asn
1250		1255		1260	)	
Arg His Lys Thr	Val Thr	Pro Glu	Glu Val	Gln Ser	Thr Cys	Glu Lys
1265	1270			1275		1280
Leu His Pro Lys	Ala His	Ser Leu	Ser Ile	Arg Asn	Glu Glu	Glu Asn
-	1285		1290	=		1295
Thr Phe Val Val		Leu Leu			Ile Ala	Ser Trp
130			1305	7	131	
Val Met Leu Gly		Tvr Glu		Ser Leu		
1315	110 1111	1320		201 204	1325	1110 115p
Lva Thr Ala Leu	Ser Tur	Thr Hig	Trn Ara	Thr Glv	Ara Pro	Thr Val
Lys Thr Ala Leu	_		Trp Arg	_	_	Thr Val
1330	_	1335		1340	)	
1330 Lys Asn Gly Lys	Phe Leu	1335 Ala Gly		1340 Thr Asp	)	Trp Asp
1330 Lys Asn Gly Lys 1345	Phe Leu	1335 Ala Gly	Leu Ser	1340 Thr Asp 1355	Gly Phe	Trp Asp 1360
1330 Lys Asn Gly Lys	Phe Leu 1350 Asn Val	1335 Ala Gly	Leu Ser	1340 Thr Asp 1355 Leu His	Gly Phe	Trp Asp 1360 Gln His
1330 Lys Asn Gly Lys 1345 Ile Gln Ser Phe	Phe Leu 1350 Asn Val	1335 Ala Gly Ile Glu	Leu Ser Glu Thr	1340 Thr Asp 1355 Leu His	Gly Phe	Trp Asp 1360 Gln His 1375
1330 Lys Asn Gly Lys 1345 Ile Gln Ser Phe Ser Ile Ser Ala	Phe Leu . 1350 Asn Val 1365 Cys Lys	1335 Ala Gly Ile Glu	Leu Ser Glu Thr 1370 Met Val	1340 Thr Asp 1355 Leu His	Gly Phe Phe Tyr Glu Asp	Trp Asp 1360 Gln His 1375 Lys His
1330 Lys Asn Gly Lys 1345 Ile Gln Ser Phe Ser Ile Ser Ala 138	Phe Leu . 1350 Asn Val 1365 Cys Lys	1335 Ala Gly Ile Glu Ile Glu	Leu Ser Glu Thr 1370 Met Val 1385	1340 Thr Asp 1355 Leu His ) Asp Tyr	Gly Phe Phe Tyr Glu Asp	Trp Asp 1360 Gln His 1375 Lys His
1330 Lys Asn Gly Lys 1345 Ile Gln Ser Phe Ser Ile Ser Ala 138 Asn Gly Thr Leu	Phe Leu . 1350 Asn Val 1365 Cys Lys	1335 Ala Gly Ile Glu Ile Glu Phe Ile	Leu Ser  Glu Thr 1370  Met Val 1385  Pro Tyr	1340 Thr Asp 1355 Leu His ) Asp Tyr	Gly Phe Phe Tyr Glu Asp 139 Gly Val	Trp Asp 1360 Gln His 1375 Lys His
1330 Lys Asn Gly Lys 1345 Ile Gln Ser Phe Ser Ile Ser Ala 138 Asn Gly Thr Leu 1395	Phe Leu . 1350 Asn Val 1365 Cys Lys 0 Pro Gln	1335 Ala Gly Ile Glu Ile Glu Phe Ile 1400	Leu Ser  Glu Thr 1370  Met Val 1385  Pro Tyr	1340 Thr Asp 1355 Leu His ) Asp Tyr Lys Asp	Gly Phe Phe Tyr Glu Asp 139 Gly Val 1405	Trp Asp 1360 Gln His 1375 Lys His O Tyr Ser
1330 Lys Asn Gly Lys 1345 Ile Gln Ser Phe Ser Ile Ser Ala 138 Asn Gly Thr Leu 1395 Val Ile Gln Lys	Phe Leu 1350 Asn Val 1365 Cys Lys O Pro Gln Lys Val	1335 Ala Gly Ile Glu Ile Glu Phe Ile 1400 Thr Trp	Leu Ser  Glu Thr 1370  Met Val 1385  Pro Tyr	1340 Thr Asp 1355 Leu His O Asp Tyr Lys Asp	Gly Phe Phe Tyr Glu Asp 139 Gly Val 1405 Asn Ala	Trp Asp 1360 Gln His 1375 Lys His O Tyr Ser
1330 Lys Asn Gly Lys 1345 Ile Gln Ser Phe Ser Ile Ser Ala 138 Asn Gly Thr Leu 1395 Val Ile Gln Lys 1410	Phe Leu 1350 Asn Val 1365 Cys Lys 0 Pro Gln Lys Val	1335 Ala Gly Ile Glu Ile Glu Phe Ile 1400 Thr Trp 1415	Leu Ser  Glu Thr 1370  Met Val 1385  Pro Tyr  Tyr Glu	1340 Thr Asp 1355 Leu His Asp Tyr Lys Asp Ala Leu 1420	Gly Phe Phe Tyr Glu Asp 1390 Gly Val 1405 Asn Ala	Trp Asp 1360 Gln His 1375 Lys His O Tyr Ser
1330 Lys Asn Gly Lys 1345 Ile Gln Ser Phe Ser Ile Ser Ala 138 Asn Gly Thr Leu 1395 Val Ile Gln Lys	Phe Leu 1350 Asn Val 1365 Cys Lys 0 Pro Gln Lys Val	1335 Ala Gly Ile Glu Ile Glu Phe Ile 1400 Thr Trp 1415	Leu Ser  Glu Thr 1370  Met Val 1385  Pro Tyr  Tyr Glu	1340 Thr Asp 1355 Leu His Asp Tyr Lys Asp Ala Leu 1420	Gly Phe Phe Tyr Glu Asp 1390 Gly Val 1405 Asn Ala	Trp Asp 1360 Gln His 1375 Lys His O Tyr Ser
1330 Lys Asn Gly Lys 1345 Ile Gln Ser Phe Ser Ile Ser Ala 138 Asn Gly Thr Leu 1395 Val Ile Gln Lys 1410	Phe Leu 1350 Asn Val 1365 Cys Lys 0 Pro Gln Lys Val	1335 Ala Gly Ile Glu Ile Glu Phe Ile 1400 Thr Trp 1415 Ala Ser	Leu Ser  Glu Thr 1370  Met Val 1385  Pro Tyr  Tyr Glu	1340 Thr Asp 1355 Leu His Asp Tyr Lys Asp Ala Leu 1420	Gly Phe Phe Tyr Glu Asp 1390 Gly Val 1405 Asn Ala	Trp Asp 1360 Gln His 1375 Lys His O Tyr Ser
1330 Lys Asn Gly Lys 1345 Ile Gln Ser Phe Ser Ile Ser Ala 138 Asn Gly Thr Leu 1395 Val Ile Gln Lys 1410 Gln Ser Gly Gly	Phe Leu . 1350 Asn Val 1365 Cys Lys O Pro Gln Lys Val Glu Leu . 1430	1335 Ala Gly Ile Glu Ile Glu Phe Ile 1400 Thr Trp 1415 Ala Ser	Leu Ser  Glu Thr 1370  Met Val 1385  Pro Tyr  Tyr Glu  Val His	1340 Thr Asp 1355 Leu His O Asp Tyr Lys Asp Ala Leu 1420 Asn Pro 1435	Gly Phe Phe Tyr Glu Asp 139 Gly Val 1405 Asn Ala Asn Gly	Trp Asp 1360 Gln His 1375 Lys His O Tyr Ser Cys Ser Lys Leu 1440
1330 Lys Asn Gly Lys 1345 Ile Gln Ser Phe Ser Ile Ser Ala 138 Asn Gly Thr Leu 1395 Val Ile Gln Lys 1410 Gln Ser Gly Gly 1425	Phe Leu . 1350 Asn Val 1365 Cys Lys O Pro Gln Lys Val Glu Leu . 1430	1335 Ala Gly Ile Glu Ile Glu Phe Ile 1400 Thr Trp 1415 Ala Ser	Leu Ser  Glu Thr 1370  Met Val 1385  Pro Tyr  Tyr Glu  Val His	1340 Thr Asp 1355 Leu His Asp Tyr Lys Asp Ala Leu 1420 Asn Pro 1435 Phe Pro	Gly Phe Phe Tyr Glu Asp 139 Gly Val 1405 Asn Ala Asn Gly	Trp Asp 1360 Gln His 1375 Lys His O Tyr Ser Cys Ser Lys Leu 1440
1330 Lys Asn Gly Lys 1345 Ile Gln Ser Phe Ser Ile Ser Ala 138 Asn Gly Thr Leu 1395 Val Ile Gln Lys 1410 Gln Ser Gly Gly 1425	Phe Leu 1350 Asn Val 1365 Cys Lys 0 Pro Gln Lys Val Glu Leu 1430 Ile Val 1445	1335 Ala Gly Ile Glu Ile Glu Phe Ile 1400 Thr Trp 1415 Ala Ser Asn Arg	Leu Ser  Glu Thr 1370 Met Val 1385 Pro Tyr  Tyr Glu  Val His  Asp Gly 1450	1340 Thr Asp 1355 Leu His Asp Tyr Lys Asp Ala Leu 1420 Asn Pro 1435 Phe Pro	Gly Phe Phe Tyr Glu Asp 1390 Gly Val 1405 Asn Ala Asn Gly Leu Trp	Trp Asp 1360 Gln His 1375 Lys His O Tyr Ser Cys Ser Lys Leu 1440 Val Gly 1455
1330 Lys Asn Gly Lys 1345 Ile Gln Ser Phe Ser Ile Ser Ala 138 Asn Gly Thr Leu 1395 Val Ile Gln Lys 1410 Gln Ser Gly Gly 1425 Phe Leu Glu Asp	Phe Leu 1350 Asn Val 1365 Cys Lys 0 Pro Gln Lys Val Glu Leu 1430 Ile Val 1445 Asp Gly	1335 Ala Gly Ile Glu Ile Glu Phe Ile 1400 Thr Trp 1415 Ala Ser Asn Arg	Leu Ser  Glu Thr 1370 Met Val 1385 Pro Tyr  Tyr Glu  Val His  Asp Gly 1450	1340 Thr Asp 1355 Leu His Asp Tyr Lys Asp Ala Leu 1420 Asn Pro 1435 Phe Pro	Gly Phe Phe Tyr Glu Asp 1390 Gly Val 1405 Asn Ala Asn Gly Leu Trp	Trp Asp 1360 Gln His 1375 Lys His O Tyr Ser Cys Ser Lys Leu 1440 Val Gly 1455 Asp Gly
1330 Lys Asn Gly Lys 1345 Ile Gln Ser Phe Ser Ile Ser Ala 138 Asn Gly Thr Leu 1395 Val Ile Gln Lys 1410 Gln Ser Gly Gly 1425 Phe Leu Glu Asp	Phe Leu . 1350 Asn Val 1365 Cys Lys 0 Pro Gln Lys Val Glu Leu . 1430 Ile Val . 1445 Asp Gly 0	1335 Ala Gly Ile Glu Ile Glu Phe Ile 1400 Thr Trp 1415 Ala Ser Asn Arg Ser Glu	Leu Ser  Glu Thr 1370  Met Val 1385  Pro Tyr  Tyr Glu  Val His  Asp Gly 1450  Ser Ser 1465	1340 Thr Asp 1355 Leu His Asp Tyr Lys Asp Ala Leu 1420 Asn Pro 1435 Phe Pro Phe Glu	Gly Phe Phe Tyr Glu Asp 139 Gly Val 1405 Asn Ala Asn Gly Leu Trp Trp Ser 147	Trp Asp 1360 Gln His 1375 Lys His O Tyr Ser Cys Ser Lys Leu 1440 Val Gly 1455 Asp Gly O
1330 Lys Asn Gly Lys 1345 Ile Gln Ser Phe Ser Ile Ser Ala 138 Asn Gly Thr Leu 1395 Val Ile Gln Lys 1410 Gln Ser Gly Gly 1425 Phe Leu Glu Asp Leu Ser Ser His	Phe Leu . 1350 Asn Val 1365 Cys Lys 0 Pro Gln Lys Val Glu Leu . 1430 Ile Val . 1445 Asp Gly 0	1335 Ala Gly Ile Glu Ile Glu Phe Ile 1400 Thr Trp 1415 Ala Ser Asn Arg Ser Glu	Leu Ser  Glu Thr 1370 Met Val 1385 Pro Tyr  Tyr Glu  Val His  Asp Gly 1450 Ser Ser 1465 Gln Ser	1340 Thr Asp 1355 Leu His Asp Tyr Lys Asp Ala Leu 1420 Asn Pro 1435 Phe Pro Phe Glu	Gly Phe Phe Tyr Glu Asp 139 Gly Val 1405 Asn Ala Asn Gly Leu Trp Trp Ser 147	Trp Asp 1360 Gln His 1375 Lys His O Tyr Ser Cys Ser Lys Leu 1440 Val Gly 1455 Asp Gly O
1330 Lys Asn Gly Lys 1345 Ile Gln Ser Phe  Ser Ile Ser Ala	Phe Leu : 1350 Asn Val 1365 Cys Lys 0 Pro Gln Lys Val Glu Leu : 1430 Ile Val : 1445 Asp Gly 0 Tyr Val	1335 Ala Gly Ile Glu Ile Glu Phe Ile 1400 Thr Trp 1415 Ala Ser Asn Arg Ser Glu Pro Trp 1480	Leu Ser  Glu Thr 1370  Met Val 1385  Pro Tyr  Tyr Glu  Val His  Asp Gly 1450  Ser Ser 1465  Gln Ser	1340 Thr Asp 1355 Leu His Asp Tyr Lys Asp Ala Leu 1420 Asn Pro 1435 Phe Pro ) Phe Glu Leu Gln	Gly Phe Phe Tyr Glu Asp 1390 Gly Val 1405 Asn Ala Asn Gly Leu Trp Trp Ser 1470 Ser Pro 1485	Trp Asp 1360 Gln His 1375 Lys His O Tyr Ser  Cys Ser  Lys Leu 1440 Val Gly 1455 Asp Gly O Gly Asp
1330 Lys Asn Gly Lys 1345 Ile Gln Ser Phe  Ser Ile Ser Ala	Phe Leu : 1350 Asn Val 1365 Cys Lys 0 Pro Gln Lys Val Glu Leu : 1430 Ile Val : 1445 Asp Gly 0 Tyr Val	1335 Ala Gly Ile Glu Ile Glu Phe Ile 1400 Thr Trp 1415 Ala Ser Asn Arg Ser Glu Pro Trp 1480	Leu Ser  Glu Thr 1370  Met Val 1385  Pro Tyr  Tyr Glu  Val His  Asp Gly 1450  Ser Ser 1465  Gln Ser	1340 Thr Asp 1355 Leu His Asp Tyr Lys Asp Ala Leu 1420 Asn Pro 1435 Phe Pro ) Phe Glu Leu Gln	Gly Phe Phe Tyr Glu Asp 139 Gly Val 1405 Asn Ala Company Trp Ser 147 Ser Pro 1485 Glu Lys	Trp Asp 1360 Gln His 1375 Lys His O Tyr Ser  Cys Ser  Lys Leu 1440 Val Gly 1455 Asp Gly O Gly Asp
1330 Lys Asn Gly Lys 1345 Ile Gln Ser Phe  Ser Ile Ser Ala	Phe Leu : 1350 Asn Val : 1365 Cys Lys 0 Pro Gln Lys Val Glu Leu : 1430 Ile Val : 1445 Asp Gly 0 Tyr Val Tyr Pro	1335 Ala Gly Ile Glu Ile Glu Phe Ile 1400 Thr Trp 1415 Ala Ser Asn Arg Ser Glu Pro Trp 1480 Lys Gly 1495	Leu Ser  Glu Thr 1370 Met Val 1385 Pro Tyr Tyr Glu  Val His  Asp Gly 1450 Ser Ser 1465 Gln Ser	1340 Thr Asp 1355 Leu His Asp Tyr Lys Asp Ala Leu 1420 Asn Pro 1435 Phe Pro Phe Glu Leu Gln Arg Arg 1500	Gly Phe Phe Tyr Glu Asp 139 Gly Val 1405 Asn Ala Asn Gly Leu Trp Trp Ser 1476 Ser Pro 1485 Glu Lys	Trp Asp 1360 Gln His 1375 Lys His 0 Tyr Ser Cys Ser Lys Leu 1440 Val Gly 1455 Asp Gly 0 Gly Asp Cys Leu
1330 Lys Asn Gly Lys 1345 Ile Gln Ser Phe Ser Ile Ser Ala 138 Asn Gly Thr Leu 1395 Val Ile Gln Lys 1410 Gln Ser Gly Gly 1425 Phe Leu Glu Asp Leu Ser Ser His 146 Arg Ala Phe Asp 1475 Cys Val Val Leu 1490	Phe Leu : 1350 Asn Val : 1365 Cys Lys 0 Pro Gln Lys Val Glu Leu : 1430 Ile Val : 1445 Asp Gly 0 Tyr Val Tyr Pro	1335 Ala Gly Ile Glu Ile Glu Phe Ile 1400 Thr Trp 1415 Ala Ser Asn Arg Ser Glu Pro Trp 1480 Lys Gly 1495 Ile Cys	Leu Ser  Glu Thr 1370 Met Val 1385 Pro Tyr Tyr Glu  Val His  Asp Gly 1450 Ser Ser 1465 Gln Ser	1340 Thr Asp 1355 Leu His Asp Tyr Lys Asp Ala Leu 1420 Asn Pro 1435 Phe Pro Phe Glu Leu Gln Arg Arg 1500	Gly Phe Phe Tyr Glu Asp 139 Gly Val 1405 Asn Ala Asn Gly Leu Trp Trp Ser 1476 Ser Pro 1485 Glu Lys	Trp Asp 1360 Gln His 1375 Lys His 0 Tyr Ser Cys Ser Lys Leu 1440 Val Gly 1455 Asp Gly 0 Gly Asp Cys Leu
1330 Lys Asn Gly Lys 1345 Ile Gln Ser Phe  Ser Ile Ser Ala	Phe Leu : 1350 Asn Val 1365 Cys Lys 0 Pro Gln Lys Val Glu Leu : 1430 Ile Val : 1445 Asp Gly 0 Tyr Val Tyr Pro Gly Ala 1510	1335 Ala Gly Ile Glu Ile Glu Phe Ile 1400 Thr Trp 1415 Ala Ser Asn Arg Ser Glu Pro Trp 1480 Lys Gly 1495 Ile Cys	Leu Ser  Glu Thr	1340 Thr Asp 1355 Leu His Asp Tyr  Lys Asp Ala Leu 1420 Asn Pro 1435 Phe Pro ) Phe Glu  Leu Gln  Arg Arg 1500 Pro Thr 1515	Gly Phe Phe Tyr Glu Asp 1390 Gly Val 1405 Asn Ala Asn Gly Leu Trp Trp Ser 1470 Ser Pro 1485 Glu Lys Lys Asp	Trp Asp 1360 Gln His 1375 Lys His O Tyr Ser  Cys Ser  Lys Leu 1440 Val Gly 1455 Asp Gly O Gly Asp  Cys Leu Lys Leu Lys Lys 1520
1330 Lys Asn Gly Lys 1345 Ile Gln Ser Phe  Ser Ile Ser Ala	Phe Leu : 1350 Asn Val 1365 Cys Lys 0 Pro Gln Lys Val Glu Leu : 1430 Ile Val : 1445 Asp Gly 0 Tyr Val Tyr Pro Gly Ala 1510	1335 Ala Gly Ile Glu Ile Glu Phe Ile 1400 Thr Trp 1415 Ala Ser Asn Arg Ser Glu Pro Trp 1480 Lys Gly 1495 Ile Cys	Leu Ser  Glu Thr	1340 Thr Asp 1355 Leu His Asp Tyr Lys Asp Ala Leu 1420 Asn Pro 1435 Phe Pro O Phe Glu Leu Gln Arg Arg 1500 Pro Thr 1515 Pro Val	Gly Phe Phe Tyr Glu Asp 1390 Gly Val 1405 Asn Ala Asn Gly Leu Trp Trp Ser 1470 Ser Pro 1485 Glu Lys Lys Asp	Trp Asp 1360 Gln His 1375 Lys His O Tyr Ser  Cys Ser  Lys Leu 1440 Val Gly 1455 Asp Gly O Gly Asp  Cys Leu Lys Leu Lys Lys 1520
1330 Lys Asn Gly Lys 1345 Ile Gln Ser Phe  Ser Ile Ser Ala	Phe Leu : 1350 Asn Val : 1365 Cys Lys 0 Pro Gln Lys Val Glu Leu : 1430 Ile Val : 1445 Asp Gly 0 Tyr Val Tyr Pro Gly Ala : 1510 Val Lys : 1525	1335 Ala Gly Ile Glu Ile Glu Phe Ile 1400 Thr Trp 1415 Ala Ser Asn Arg Ser Glu Pro Trp 1480 Lys Gly 1495 Ile Cys Ser Ser	Leu Ser  Glu Thr 1370 Met Val 1385 Pro Tyr  Tyr Glu  Val His  Asp Gly 1450 Ser Ser 1465 Gln Ser  Ile Trp  Tyr Lys  Lys Cys 1530	1340 Thr Asp 1355 Leu His Asp Tyr Lys Asp Ala Leu 1420 Asn Pro 1435 Phe Pro Phe Glu Leu Gln Arg Arg 1500 Pro Thr 1515 Pro Val	Gly Phe Phe Tyr Glu Asp 139 Gly Val 1405 Asn Ala Asn Gly Leu Trp Trp Ser 147 Ser Pro 1485 Glu Lys Lys Asp Ala Lys	Trp Asp 1360 Gln His 1375 Lys His O Tyr Ser  Cys Ser  Lys Leu 1440 Val Gly 1455 Asp Gly O Gly Asp  Cys Leu  Lys Lys Lys Lys 1520 Arg Asp 1535

1540 1545 Val Leu His Ser Phe Ser Glu Ala Lys Gln Val Cys Gln Glu Leu Asp 1555 1560 1565 His Ser Ala Thr Val Val Thr Ile Ala Asp Glu Asn Glu Asn Lys Phe 1570 1575 1580 Val Ser Arg Leu Met Arg Glu Asn Tyr Asn Ile Thr Met Arg Val Trp 1585 1590 1595 1600 Leu Gly Leu Ser Gln His Ser Leu Asp Gln Ser Trp Ser Trp Leu Asp 1605 1610 1615 Gly Leu Asp Val Thr Phe Val Lys Trp Glu Asn Lys Thr Lys Asp Gly 1620 1625 1630 Asp Gly Lys Cys Ser Ile Leu Ile Ala Ser Asn Glu Thr Trp Arg Lys 1635 1640 1645 Val His Cys Ser Arg Gly Tyr Ala Arg Ala Val Cys Lys Ile Pro Leu 1650 1655 1660 Ser Pro Asp Tyr Thr Gly Ile Ala Ile Leu Phe Ala Val Leu Cys Leu 1665 1670 1675 1680 Leu Gly Leu Ile Ser Leu Ala Ile Trp Phe Leu Leu Gln Arg Ser His 1685 1690 1695

Ile Arg Trp Thr Gly Phe Ser Ser Val Arg Tyr Glu His Gly Thr Asn 1700 1705 1710

Glu Asp Glu Val Met Leu Pro Ser Phe His Asp 1715 1720